Christine Mirzayan Science and Technology Policy Graduate Fellows
2018 Biographical Sketches

Cesar Barraza-Botet (2018; BEES/DEPS) earned his Ph.D. in Mechanical Engineering and a graduate certificate in Science, Technology and Public Policy at the University of Michigan. His doctorate research was focused on the combustion chemistry and physics of ethanol blends with the objective of determining the potential of ethanol to substitute gasoline in the transportation sector. For his dissertation, he also analyzed several aspects of the U.S. Renewable Fuel Standard program, including the technical and political factors that have contributed to its challenging implementation. Cesar is a Fulbright Fellow from Colombia, where he received his B.S.E. and M.S.E. in Mechanical Engineering. During his doctoral studies, he carried out collaborative research at the National Renewable Energy Laboratory, and represented the University of Michigan at the 2017 UN Framework Convention on Climate Change - COP 23. At the National Academies' Board on Energy and Environmental Systems, he developed expertise in U.S. and international vehicle standards, subnational climate change assessments, and fuel economy and carbon dioxide removal technologies. Cesar is interested in designing and implementing policies for developing countries--especially in Latin-America--to decarbonize their energy sources through innovation, technology transfer and market mechanisms. (Updated 4/2018)

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Michelle Burbage (2018; BCYF/DBASSE) received her Ph.D. in Health Education from the University of Cincinnati with a cognate emphasis in Behavioral Analysis. During her master's and doctoral program, she served as a graduate assistant in which she conducted research as well as taught undergraduate and graduate level courses. She is extensively involved in conducting scholarly research and grant writing dedicated to improving the health and well-being of children, adolescents, minorities, and other vulnerable populations. Her research agenda involves examining factors related to substance abuse and mental health among these populations as well as how public health policies affect these behaviors. Moreover, she has a passion for global health and has traveled to Ecuador, Guatemala, Morocco, and Israel. She hopes to continue learning more about foreign public health initiatives and policies as well as how culture can affect these areas. She received the Outstanding Student Award during her Master's and Ph.D. for her service and research contributions and dedication to the field. Last year, she was selected to represent her program of Heath Education by attending a meeting with UC President Pinto to discuss community outreach programs UC is currently involved with in order to better assist minority youth. (Updated 4/2018)

Jenny Carlson (2018; STEP/PGA) is currently a Postdoctoral Research Fellow at Johns Hopkins Bloomberg School of Public Health studying the effects of bacterial exposure in mosquito larvae on the resulting adults' vector competence for human pathogens (Plasmodium falciparum, Dengue virus, and Zika virus). Jenny earned her Ph.D. at the University of California at Davis in 2015 in entomology with a designated emphasis in biology of vector-borne diseases. Her dissertation research examined culicine vector competence and its role in the transmission of avian malaria in California. Jenny also earned her M.S. in biology studying avian malaria prevalence and diversity in the avifauna of Socorro Island, Mexico. In addition to traveling to Socorro Island with the Mexican Navy, her graduate studies have led to conduct research in Alaska and in Cameroon. Prior to Jenny's graduate studies, she worked at the USDA APHIS National Wildlife Research Center on the National Avian 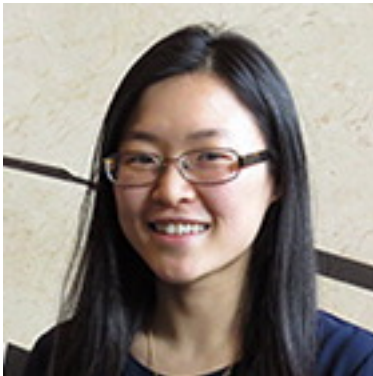Influenza Surveillance Program for two years, and prior to that she received her BS in zoology at Colorado State University. Jenny has also served as a consultant to the WHO drafting the guidelines on efficacy trails for vector traps. In addition to research, Jenny has extensive teaching experience having held teaching assistantships in more than eight subjects, coordinated summer biology courses for pre-medical students, and developed curriculum and taught two summer science camps for children of ages 4-12. As an NSF GK-12 fellow, she implemented inquiry-based methods for learning biology at an inner city high school for pregnant teenagers in San Francisco. Jenny has a vision of improving the sphere of decision-making at all leadership levels based on measurable and rigorous criteria as in the scientific field especially in predicting, preventing and improving human, animal and environmental health. Jenny is bicultural (US/Italy), bilingual (English/Italian) and proficient in Spanish, and has lived in Italy and Germany in addition to the US. (Updated 4/2017)

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Alanna Casey (2018; OSP/PGA) completed her PhD degree in Marine Affairs at the University of Rhode Island. She holds an M.A. in History/Archaeology from the University of Rhode Island and a B.A. in History and Coastal and Marine Sciences from Smith College. Her dissertation uses historical methods and key informant interviews to examine how coastal managers have created and responded to changes in the coupled built-natural coastal environment overtime. Her work investigates why and how perceptions of environmental change have fluctuated overtime and how risk perceptions and environmental expectations prohibit or enable current climate change responses through institutional priorities and path-dependent processes. Alanna has worked as a team coordinator on climate change vulnerability assessment processes in two national parks, developing indicators to assess resource vulnerability and adaptive capacity in both a sediment river and barrier island system. (Updated 4/2018)

Kimberly Duong (2018; BASC/DELS) is a Ph.D. student in the Department of Civil and Environmental Engineering at the University of California, Irvine (UCI). She received her bachelor's degree from UCLA in Atmospheric, Oceanic and Environmental Sciences. Her dissertation is focused on drought management in southern California. Specifically, she is interested in improving the efficiency of turf rebate programs, which incentivize homeowners to swap out their water-intensive turf grass for drought-tolerant landscaping. Turf rebate programs have the potential to drastically reduce urban water demand because outdoor water use comprises at least 50% of total domestic water usage in arid urban regions. She is active in STEM outreach and sustainability initiatives on campus. In 2016, she was the Climate Action Planning Fellow for the University of California Office of the President Carbon Neutrality Initiative, assisting with the UCI 2016 Climate Action Plan Update. In 2017, she was a Climate Action Training Fellow through the UCI Sustainability Initiative. She serves as the Executive Director of Scientific Operations for Climatepedia, a climate change communications non-profit organization. She is also President of Climatepedia's UCI chapter. In her future career, she hopes to be a climate change and water management policy advisor at the federal or international level. (Updated 4/2018)

Laiah Factor (2018; BCYF/DBASSE) is a doctoral candidate at Indiana University Bloomington's Department of Speech and Hearing Sciences and is currently completing her dissertation research. Laiah's research centers around the embodied link between co-speech manual gesture, cognitive development, and learning in school-aged children—specifically, the acquisition of novel words and concepts in a second language. Prior to her doctoral work at IU, Laiah received her master's degree in child language development from the University of Chicago. When Laiah is not studying gesture and child development, she enjoys spoiling her dog, playing board games, as well as instructing kickboxing and weight training classes at a local Bloomington, IN gym. (Updated 4/2018)

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Miranda Galvin (2018; CLAJ/DBASSE) is a Ph.D. candidate in Criminology and Criminal Justice at the University of Maryland, College Park. Her primary areas of interest include white collar crime and decision-making related to both offending and criminal justice case processing. She has done research on the viability of federal administrative data for the study of white collar crime, public preferences for white collar crime policy and perceptions of white collar crime seriousness, the decision to report crime to the police, and offenders' decisions to use weapons. Her dissertation explores federal case processing of white collar crime, keying in on the impact of prosecutorial outcomes and the substantive effects of different definitions of white collar crime. (Updated 4/2018)

Elizabeth Garbee (2018; BHEW/PGA) is a Ph.D. candidate in science education policy at Arizona State University, whose dissertation work focuses on the value of a STEM Ph.D. from student and employer perspectives. Trained as a physicist and a classicist, she cares deeply about issues of equity, democracy, and education. When she graduates, she plans to join the Congressional campaign of Dr. Heather Ross for the AZ 6th as a policy analyst. Elizabeth is also a classical violinist, a Colorado native who tries to spend as much time outside as possible, and a keen appreciator of tacos. (Updated 4/2018)

Alex Helman (2018; CWSEM/PGA) is a Ph.D. candidate in biochemistry at the University of Kentucky and holds a B.S. in biochemistry from Elon University. Her dissertation research examines cerebrovascular contributions to cognitive impairment and dementia, particularly in individuals with Down syndrome. Alex currently serves as the Congressional Ambassador for the Alzheimer's Association, where she serves as the main point of in-district contact between the association and the representative for KY-6. As an advocate for science policy issues, Alex served on the organizing committee for the Lexington March for Science and has held numerous positions focused on science outreach for various campus organizations. She is passionate about retention of underrepresented minorities in STEM, improving campus climates, and creating sound health policies for our aging population. (Updated 4/2018)

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Victoria Herrmann (2018; PRB) is completing her Ph.D. in Geography at the Scott Polar Research Institute at Cambridge University as a Gates Scholar. She is the President & Managing Director of The Arctic Institute, a small nonprofit dedicated to Arctic security research, and recently completed a National Geographic Young Explorers Grant for a research and storytelling project on coastal change in the US, America's Eroding Edges. Victoria will continue this work after the completion of her Ph.D. with the support of a JMK Innovation Prize, which you can read about here. Previously, she was a Fulbright grantee to Canada and a Junior Fellow in climate and energy at the Carnegie Endowment for International Peace. (Updated 4/2018)

Courtney Hill – Rosenblith Fellow – (2018; DSC/PGA) is currently completing a Ph.D. in Civil and Environmental Engineering at the University of Virginia as a National Science Fellow and a Jefferson Fellow. Her research focuses on low cost, point-of-use water treatment devices in rural South Africa. Specifically, her research investigates the relationship between human health and access to silver embedded ceramics as well as other mechanisms by which silver can be used to treat water in low income areas. During her graduate studies, Courtney co-founded the Science Policy Initiative at UVA, University of Virginia's first science policy organization, to empower science and engineering students to be more informed and involved in science policy. She has also worked for UVA CHARGE, coordinating programs for University of Virginia faculty search committees that reduce implicit bias in promotion policies and selection committees. Prior to her graduate studies, Courtney taught English at a math and science high school in South Korea as a Fulbright Scholar and received her B.S. in civil engineering at the University of Arkansas. (Updated 4/2018)

Tracy Kambara (2018; ILAR & BLS/DELS) is completing her Ph.D. in Microbiology at Harvard University, studying the genetics of bacterial pathogens as an NSF Graduate Research Fellow. During her graduate studies, Tracy served as president of the Harvard Science Policy Group and was on the steering committee for the Program in Genetics and Genomics. As an undergraduate at MIT, she studied Biology and Public Policy and spent a summer at the MIT Washington Office. There, she contributed to a white paper on convergence of the life sciences and engineering, which sparked her interest in science policy. At the Academies, Tracy assisted with preparations for several international workshops on biosecurity, researching the state of science and technology policies in Latin America, Africa, and the Middle East. (Updated 4/2018)

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Karina Khazmutdinova – Gulf Research Fellow – (2018; GRP) recently completed her postdoctoral research at Florida State University, working with inverse models to better quantify the global ocean circulation and its effects on climate. She earned her PhD in Geophysical Fluid Dynamics and has worked across the fields of physical and observational oceanography, climate science, and hydrology. She came to Florida State University in 2011 after completing an undergraduate degree in applied mathematics at the National University of Science and Technology in Moscow, Russia. Karina has been an active member of environmental groups in Tallahassee, has volunteered for different educational programs and participated in several environmental campaigns. In addition to two oceanographic cruises in the Arctic and Indian Ocean, she also participated in a large oceanographic campaign in the Gulf of Mexico. Karina wants to use her research experience to create a positive and scientifically based impact on political decisions. (Updated 4/2018)

Emily Moravec (2018; SSB & BPA/DEPS) is currently completing a Ph.D. in astronomy at the University of Florida. She holds an MS in astronomy from the University of Florida and a B.A. in physics from St. Olaf College. Her dissertation work focuses on determining the shape and size of enormous jets of matter expelled from the black holes at the centers of active galaxies in order to study the complex, unique environment of massive galaxy clusters through data analysis of radio and infrared images. Her previous research projects focused on understanding the structure and components of active galaxies. She is passionate about science education and outreach. She organizes and participates in large community astronomy focused events, travels to rural communities with educational astronomy events, visits schools and summer camps with a portable planetarium and educational activities, and engages in multimedia efforts in order to promote scientific literacy and encourage a wide range of ages to engage with science. She strives to foster effective and insightful communication between scientists and the public. (Updated 4/2018)

Stephanie Oh (2018; BCYF/DBASSE) is an M.D./Ph.D. student in the Rutgers-RWJMS/Princeton University Physician-Scientist Program in which she recently finished her Ph.D. in Neuroscience and is in the process of completing her M.D. degree. Her thesis work focused on the neuroprotective role of novel coding mRNA and non-coding microRNAs in Parkinson's disease. She is a director of the local student-run free clinic, leading efforts to provide free, longitudinal, primary medical care to uninsured patients in the community. Prior to her doctoral studies, Stephanie received her B.S. in biological engineering at MIT, and served as an AmeriCorps Highland Street Fellow at Mass Mentoring Partnership, a non-profit dedicated to improving mentoring programs and youth development organizations. (Updated 4/2018)

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Chris Quintanilla (2018; CSTL/PGA) is currently finishing his Ph.D. in Developmental Biology at the University of Chicago. His research is focused on signaling molecules that control organ formation in the zebrafish embryo. During his doctoral studies, he did science communication work with the research development office, which focused on collaborative research efforts taking place across several scientific fields. He received my B.A. in Molecular and Cell Biology from the University of California at Berkeley. He is passionate about science writing, science communication and learning more about the process by which scientists help to inform policy makers and the general public. (Updated 4/2018)

Cato Sandford (2018; STS/PGA) moved from the UK to the US in 2011 where he completed his Ph.D. in physics at New York University. Now he hopes to explore how social and environmental issues are understood and addressed by the vast landscape of decision-makers. To this end, he also finished an assignment at the Rockefeller Foundation where he worked on strategy for electrification in the developing world. (Updated 4/2018)

– (2018; GRPEO) is a native of research assistant and college career. She graduated in in ecology, environmental, and Southeastern Louisiana her master's in applied sociology sustainability. Her research loss, and the polarization of Martha hopes to continue her program, focusing on social the fall. (Updated 4/2018)

Martha Sibley – Gulf Research Fellow South Louisiana and has worked as a pharmacy technician throughout her 2013 and 2015 with bachelor's degrees evolutionary biology and sociology from University. In 2017, Martha completed from SELU, focused in globalization and centers on climate change, coastal land environmental knowledge and concern. education in a sociology doctoral vulnerability to disasters and policy, in

Anne Simonis (2018; BOSE/DBASSE) is an acoustic ecologist and oceanographer who completed her Ph.D. at Scripps Institution of Oceanography at UCSD. Her research explores lunar patterns in dolphin foraging behavior, the classification of marine mammal sounds, and the impacts of anthropogenic sound on marine ecosystems. Throughout her graduate career, she has served as a research mentor to undergraduate and high school students, using a combined approach of virtual and in-person instruction. Anne is passionate about improving youth mentoring programs, forming connections between researchers and the greater community, and getting authentic data and science practices into science classrooms. Prior to her doctoral research, Anne worked as an educator and biologist for conservation focused non-profit groups in Australia, the

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Galapagos Islands and mainland Ecuador. She also enjoys designing interactive experiences for people to connect with the natural world through the sounds around them. (Updated 4/2018)

Kelly Singel (2018; HCS/HMD) is finishing her Ph.D. in Immunology and Microbiology, with a focus in Tumor Immunology, at Roswell Park Comprehensive Cancer Center in Buffalo, New York. Her dissertation research has focused on the role of neutrophils in the tumor microenvironment of patients with metastatic ovarian cancer, and how to alter neutrophil function to enhance immunotherapeutic strategies. Kelly has nearly 10 years of research experience working in collaborative and interdisciplinary fields. She has served as the Chair of her department's NIH-funded T32 Training Grant Fellows' Leadership Committee, and represented her department at Roswell Park's Annual Scientific and Research Retreat. Kelly has also received a Professional Development and Career Exploration Fund from Roswell Park, as well as a Young Investigator's Award from the American Association of Immunologists. She has co-authored six peer-reviewed articles and two invited reviews of the field. Ultimately, Kelly aims to leverage her expertise in translational and preclinical research to advance policies that improve treatments and outcomes for patients with cancer and chronic immune disorders, as well as delivery of novel therapies to patients safely, quickly, and cost-effectively. While working with the National Cancer Policy Forum, Kelly experienced the convening power of the National Academies and helped with planning workshops on patient access to oncology imaging and the development of checkpoint inhibitors for cancer treatment. (Updated 4/2018)

Elaine Soohoo (2018; HCS/HMD) is a Ph.D. candidate in Biomedical Engineering at Carnegie Mellon University where her research focuses on the development of a novel, non-thromboembolic cardiac assist device inspired by the natural twisting motion of the beating heart. While there, she has worked as a member of the Graduate Student Assembly and the Student Health Advisory Committee in order to advocate for the needs of the graduate students of Carnegie Mellon. In addition to her graduate work, Elaine is also a Clinical Artificial Heart Biomedical Engineer at the University of Pittsburgh Medical Center where she works with primary care providers to maintain and manage cardiac assist device function in both pediatric and adult heart failure patients. Elaine received her B.S. in Bioengineering from the University of California Berkeley and M.S. in Biomedical Engineering from Carnegie Mellon University. During her time as a Mirzayan Fellow, she worked mainly on projects related to the Roundtable on Quality Care for People with Serious Illness and has contributed to a project of the National Cancer Policy Forum. (Updated 4/2018)

Liana Vaccari (2018; OSB/DELS) received her PhD in chemical engineering from the University of Pennsylvania, where she studied the physical characteristics of bacteria behavior at oil-water interfaces under the Gulf of Mexico Oil Spill Research Initiative. Her policy interests include environmental issues and advancing sustainability from a systems perspective, as well as promoting science communication and education. Liana served on the boards of the Penn Science Policy and Diplomacy Groups and the Graduate Student Engineering Group, co-organizing a symposium on science communication and promoting outreach among the engineering students. As a Mirzayan Fellow on the Ocean Studies Board, she aided in reviewing conventional coral reef protective measures and supported the work on the report for dispersant use in oil spills. (Updated 4/2018)

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Grace Williams (2018; COSEMPUP/PGA) is completing her Ph.D. in Molecular Science and Nanotechnology in the Department of Biomedical Engineering at Louisiana Tech University. Her research focuses on developing novel protein-centered radical detection methods to identify therapeutic targets for neurodegenerative diseases such as Alzheimer's Disease; she also investigates the role of nicotinic acetylcholine receptors on amyloid beta with an emphasis on Alzheimer's Disease pathology. Grace has a passion for advocacy and community outreach. While on the national committee and regional executive board for the National Society of Black Engineers, Grace coordinated initiatives to engage K-12 students and cultivate scientific curiosity. Serving as a congressional ambassador, regional advisory board member, and community educator for the Alzheimer's Association, Grace combines her research training and advocacy efforts for policy priorities that govern medical care, enact social change, and protect patient populations. (Updated 4/2018)